

**PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference D9332C:ANB:LJG	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. CT/AU2003/001483	International Filing Date (day/month/year) 7 November 2003	Priority Date (day/month/year) 7 November 2002
International Patent Classification (IPC) or national classification and IPC Int. Cl. 7 C12Q 1/68		
Applicant UNISEARCH LIMITED et al		

This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

This REPORT consists of a total of 3 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheet(s).

This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 1 June 2004	Date of completion of the report 14 February 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer  MADHU K. JOGLA Telephone No. (02) 6283 2512

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU2003/001483

I. Basis of the report

1. With regard to the elements of the international application:*

- the international application as originally filed.
- the description, pages 1-56 , as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- the claims, pages 58-68 , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages 57 , received on 07.02.2005 with the letter of 07.02.2005
- the drawings, pages 1-23 , as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. The amendments have resulted in the cancellation of:

- the description, pages
- the claims, Nos.
- the drawings, sheets/fig.

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU2003/001483

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Statement

Novelty (N)	Claims 1-28	YES
	Claims	NO
Inventive step (IS)	Claims 1-28	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-28	YES
	Claims	NO

Citations and explanations (Rule 70.7)

The following documents identified in the International Search Report have been considered for the purposes of this report:

- D1 Am J Physiol Heart Circ Physiol (2001)
- D2 J Biol Chem (1996)
- D3 Biochem J (2002)
- D4 FEBS Letters (1997)
- D5 WO 2000/079274
- D6 Archives of Biochem Biophys (1998)
- D7 Oncogene (2000)
- D8 Cancer Cell (2003); P,X
- D9 Toxicology (1998)

Novelty (N) and Inventive Step (IS) Claims 1-28

The present invention relates to a process for identifying a compound which selectively induces the mitochondrial permeability transition (MPT) in proliferating cells.

While citations D1-D9 disclose and teach processes or methods for identifying compounds which induce MPT, none of the citations appear to teach or direct the skilled addressee to using this method in proliferating cells.

Therefore the invention is novel and inventive.

CLAIMS:

1. A process for identifying a compound which selectively induces the mitochondrial permeability transition (MPT) in proliferating cells, wherein said process comprises contacting a cell or cell extract with a compound, determining whether the compound binds to adenine nucleotide translocator (ANT), and determining whether the compound selectively induces the MPT in proliferating cells.

2. A process for screening a plurality of compounds to identify a compound which selectively induces MPT in proliferating cells, wherein said process comprises contacting a cell or a cell extract with the plurality of compounds, determining whether any of the compounds bind to ANT, and if so, separately determining for each of the plurality of compounds whether the compound selectively induces the MPT in proliferating cells.

3. The process of claim 1 or 2, wherein selectivity for proliferating cells is determined by comparing the effect of compounds identified as binding to ANT on the MPT in proliferating cells with the effect on the MPT in non-proliferating or growth quiescent cells.

4. The process of claim 1 or 2, wherein said determination of induction of the MPT involves measuring changes in Cytochrome C release.

5. The process of claim 1 or 2, wherein said determination of induction of the MPT involves measuring changes in cellular superoxide concentration.

6. A process of inducing MPT in a vertebrate, wherein the method comprises administering to the vertebrate a therapeutically effective amount of at least one compound identified in accordance with the process of any one of claims 1 to 5, or a therapeutically effective amount of a pharmaceutical composition comprising at least one of said compounds together with a pharmaceutically acceptable carrier, adjuvant and/or diluent.

7. A process of inducing apoptosis in proliferating mammalian cells, comprising administering to the mammal an apoptosis-inducing amount of a compound identified in accordance with the process of any one of claims 1 to 5, or a therapeutically effective amount of a pharmaceutical composition comprising at least one of the compounds together with a pharmaceutically acceptable carrier, adjuvant and/or diluent.

8. A process of inhibiting angiogenesis in a mammal, comprising administering to the mammal an angiogenesis-inhibiting amount of a compound identified in accordance with the process of any one of claim 1 to 5, or a therapeutically effective amount of a pharmaceutical composition comprising at least one of said compounds together with a pharmaceutically acceptable carrier, adjuvant and/or diluent.

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